



# Agri-Business Supplement

## Zarai Taraqati Bank Limited.

### MASTITIS DISEASE IN ANIMALS

#### What is Mastitis

Mastitis, or inflammation of the mammary gland, is the most common and the most expensive disease of dairy cattle throughout most of the world. Although stress and physical injuries may cause inflammation of the gland, infection by invading bacteria or other microorganisms (fungi, yeasts and possibly viruses) is the primary cause of mastitis.

#### Types of Mastitis

##### 1. Clinical Mastitis

In clinical mastitis, the infected quarter often become swollen, sometimes painful to touch, and the milk is visibly altered by the presence of clots, flakes, or discolored serum and sometimes blood. In severe cases (acute mastitis), the cow shows signs of generalized reaction: fever, rapid pulse, loss of appetite and sharp decline in milk production.

##### 2. Sub-clinical Mastitis

In, subclinical mastitis is subtle and more difficult to detect. The cow appears healthy, the udder does not show any signs of inflammation and the milk seems normal. However, microorganisms and white blood cells (somatic cells) that fight infections are found in elevated numbers in the milk.

##### 3. Environmental Mastitis

Soil, manure, bedding, calving pads and water host bacteria that cause environmental mastitis. They



Dirty, unclipped udder can contribute to Environmental Mastitis

Clipped, clean udder

also occur on parts of the cow other than the mammary gland. Housed cows tend to be more at risk than grazing cows. The main bacteria are *Strep uberis* which can sometimes persist, and can spread at milking. The other culprit is *E. coli* which does

not thrive in the lactating udder and often the infections do not persist. Dirty, unclipped udder can contribute to Environmental Mastitis

Transition and post-calving cows are very susceptible to these infections because their natural defences are low. Large infections of environmental mastitis bacteria can contaminate teats, especially if udders are wet and exposed to mud and manure, such as when animals lie down during calving.

#### Symptoms of Mastitis

Clinical mastitis can present itself in a wide degree of severity of symptoms which can range from mild to moderate to severe. The degree of illness and the symptoms present will depend on many factors, such as the nutritional or immune status of the cow, which pathogen is responsible for the inflammation, and a range of environmental factors such as cleanliness, humidity and ambient temperature. Moderate to severe clinical cases can be very painful and unpleasant for the cow.

The most obvious symptoms of clinical mastitis are abnormalities in:

- The udder such as swelling, heat, hardness, redness, or pain; and
- The milk such as a watery appearance, flakes, clots, or pus.

Other symptoms, depending upon the severity of the illness and how systemic it has become, can also include:

- A reduction in milk yield.
- An increase in body temperature.
- The lack of appetite.
- Sunken eyes.
- Signs of diarrhoea and dehydration.
- A reduction in mobility, due to the pain of a swollen udder or simply due to feeling unwell.

An overall effect of the chemical alterations in milk mean that the pH of milk, normally around 6.6, can increase to 6.8 or 6.9 in mastitic cows. The presence of certain blood enzymes in milk from mastitic cows can affect the taste of milk and its ability to be made into other dairy products such as cheese or yoghurt.

## Control of Environmental Mastitis



Environmental pathogens are more difficult to control than the contagious pathogens. Many of these organisms are resistant to germicides in teat dip and antibiotics in dry cow therapy. Identification of the source and removal (bedding, ponds, mud) is the key to control. Udders can be clipped to minimize the amount of manure clinging to the glands. Only clean dry teats should be milked. Teats should be pre-dipped with germicide before milking. Cows should be kept standing after milking (offer them feed). Sterile single-dose infusion products should be used and sterile infusion techniques (alcohol swab) should be used. The milking parlor should be kept clean. The teat dipper should be kept clean; organisms can survive in many germicides. Pipelines/water heater may need to be replaced in cases of *Pseudomonas* contamination.

## Mastitis Treatment

**Antibiotic Treatment:** Typically when clinical mastitis is detected, the cow is milked out and then given an intramammary infusion of antibiotic, i.e. infused directly into the infected gland. Clinical mastitis symptoms are indicated in the Mastitis Clinical Syndromes resource, but most often are recognized by the milker from detection of clots or flakes in the milk, from a cow that has a quarter sensitive to the touch (she kicks a lot when you touch a particular quarter), a quarter that is swollen or hot to the touch. Because the cow's udder then contains antibiotics which must be kept out of the food supply, that cow's milk must not be put into the milk tank for some specified number of milkings after treatment.

**Intra-mammary Infusions:** Prior to intra-mammary infusion, the teat is cleaned well and the tip of the teat is swabbed with an alcohol swab and allowed to dry for a number of seconds. The antibiotic comes in a plastic tube with a plastic infusion cannula on the end. Historically these have been long cannulas and the

cannula was inserted completely through the streak canal (called full insertion). **Oxytocin Treatment:** A key contributing factor to duration of mastitis is the frequency and completeness of milk removal from the infected quarter. In some cases, cows are stripped between normal milking times, sometimes with injection of oxytocin to stimulate an effective milk let down. Clearly removal of the primary growth medium of the bacteria, the milk, more often should enhance rate of recovery from infection.

**Non-responding Cases:** In spite of the natural resistance mechanisms of the cow, antibiotic treatment to help her fight bacterial infection, and other methods such as frequently stripping out the milk, some cows are unable to eliminate the infection. These are often considered to be chronically infected cows, typically with *Staph. aureus*, and remain a constant source of infection for other cows. Culling of chronically infected cows sometimes is the only way to effectively control spread of mastitis in the herd.

## Prevention

**Hygienic Teat Management:** which includes good housing management, effective teat preparation and disinfection for good milk hygiene, teat health and disease control.

**Prompt Identification and Treatment of Clinical Mastitis Cases:** including the use of the most appropriate treatment for the symptoms.

**Dry Cow Management and Therapy:** where cows are dried off abruptly and teats are cleaned scrupulously before dry cow antibiotics are administered, including the use of teat-end sealants if appropriate.

**Culling Chronically Affected Cows:** cows that become impossible to cure and represent a reservoir of infection for the whole herd.

**Regular Testing and Maintenance of the Milking Machine:** with regular, recommended teatcup liner replacement and milking machine servicing and attention paid to items which must be checked on a daily, weekly or monthly basis.

**Good Record Keeping:** of all aspects of mastitis treatment, dry cow therapy, milking machine servicing, Somatic Cell Counts and Bactoscan results, and clinical mastitis cases.

## References

Department of Animal Science. "Mastitis in Dairy Cows" (PDF). MacDonald Campus of McGill University. Archived from the original (PDF) on July 8, 2003. Retrieved 4 February 2010.

## IMPACT OF NATURAL DISASTERS ON AGRICULTURE PRODUCTION

### Introduction



Earthquakes, landslides, flood, drought, fires, and hailstorms are some of the natural calamities that occur every year, at any point, and anywhere, causing threats to the livelihoods of smallholder farmers and their food security. Disasters can cause loss of human and animal life, field crops, stored seeds, agricultural equipment/materials, and their supply systems (e.g. infrastructure). Developing nations are especially vulnerable to disasters as the majority of livelihoods (50–95% of the population) are based on farming. They can be remote, with high concentrations of mass poverty, food insecurity, and illiteracy therefore they face challenges in access to food, shelter, and communication during relief and recovery after a disaster. Therefore, after a natural disaster, rural areas require emergency interventions to maintain livelihoods and food security and a longer-term integrated recovery plan to minimize the possibility of a secondary disaster, as inexpensively as possible given limited local financial resources.

### A Natural Disaster is a Disruption in the Balance of the Environment

The causes of natural disasters are many. Human activities play a role in the frequency and severity of disasters. Understanding the causes of natural disaster can provide clues to their prevention. Natural

#### Disasters

include floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, tsunamis, and other geologic processes. A natural disaster can cause loss of life or property damage, and typically leaves some economic damage in its wake, the severity of which depends on the affected population's resilience, or ability to recover and also on the infrastructure available. A series of natural disasters has been hit by Pakistan in recent years. In October 2005, there was a 7.6

magnitude earthquake and in 2010, 2011, 2012, 2013 and 2014 there was severe flooding. These disasters had a massive cumulative effect on the economy of Pakistan. In 2010 monsoon rains caused massive floods in Pakistan which killed nearly two thousand people, affected more than 20million and made at least 7.8 million people food insecure and inflicted over US\$ 16 billion in economic loss.

Agriculture accounts for 21% of Pakistan's GDP, 45 per cent of employment and 60 per cent of exports. A disaster of 2010 resulted loss of 2.5 million tons of rice, 7.5 million tons of sugarcane, 0.7 million tons of cotton and 0.3 million tons of maize. In September 2014, severe and late monsoon spell, coupled with major water discharges through the eastern rivers, especially in Chenab river, resulted in massive floods in Azad Jammu & Kashmir (AJ&K), Punjab and landslides in Gilgit-Baltistan (GB) at an unprecedented scale, both in terms of volume and spatial coverage. Despite forecasts of below-average rainfall, heavy downpours began in first week of September 2014, which damaged crops, infrastructure and human settlements, thus adversely affected national economy directly and indirectly. According to available sources in September 2014, more than 2.5 million people were affected by the floods and rains, 367 persons lost their lives and 129,880 houses were fully destroyed. Over 1.0 million acres of cropland and 250,000 farmers were affected, in most cases resulting in the loss of standing food, fodder or cash crops. The estimated cost of the recovery effort was US\$439.7 million.

### Types of Natural Hazards

Natural disasters fall into three broad groups:

#### 1. Those Caused by Movements of the Earth

These occur with the minimum amount of warning & include earthquakes, volcanic eruptions and tsunamis. They are difficult to predict and impossible to stop. All that can be done is to take appropriate action to limit damage and loss of life after they occur.

#### 2. Weather Related Disasters

These include hurricanes, tornadoes, extreme heat and extreme cold weather. Some degree of advanced warning, but since weather is unpredictable, nothing can be done to stop these disasters from developing once the weather system develops. Again, in areas prone to this sort of disaster, some provision can be made to limit damage and loss of life.

### 3. Floods, Mudslides, Landslides and Famine

These are usually the consequence of extreme weather events, or are supplementary to other natural disasters. Often they are the result of extreme and unforeseen conditions.

#### Earthquakes

Earthquakes are the result of forces deep within the earth's interior. Sudden break within the upper layers of the earth, sometimes breaking the surface, resulting in the vibration of the ground, which were strong enough will cause the collapse of buildings and destruction of life and property.

You cannot prevent earthquakes but you can reduce the potential damages by Development of possible warning indicators, follow Land-use regulations, Building regulations, Relocation of communities, Public awareness and education programs.

#### Tsunami



If an earthquake occurs under the sea it can cause a tsunami. The most destructive of these are generated from large shallow earthquakes. The sudden vertical displacement generates waves that can travel great distances at high speed. While out in the ocean these waves can be no more than a few centimeters high, but as they approach the shore the waves are compressed and become very much higher.

**Volcanoes** are mountains that are characterized by having a crater that opens downwards to a reservoir of



molten rock. When pressure from gases within the molten rock becomes too great, an eruption occurs. These can be quite modest and result in little more than a trickle, or they can explode with considerable force and be accompanied by lava flows, flattened landscapes, poisonous gases, flying rock and ash.

Due to their great heat the lava flows are a great fire hazard and in forested areas wildfires often result.



Lava flows destroy everything in their path, interrupting watercourses and causing flooding and mudslides, but since they generally move fairly slowly, people can usually get out of their way.

#### Cyclones

A storm or system of winds that rotates about a center of low atmospheric pressure, advances at a speed of 20 to 30 miles (about 30 to 50 kilometers) an hour, and often brings heavy rain.

Tropical cyclones have been the cause of a number of natural disasters. They are storms with large low-pressure centers and numerous thunderstorms that produce high winds and heavy rain. Generally they are known as **hurricanes**, but in the northwest pacific region they are known as typhoons. A hurricane is defined as having a wind speed in excess of 73 mph (117 kph), but maximum sustained winds in the strongest tropical cyclones have been estimated to reach 195 mph.

#### Tornadoes

They can also be a lethal weather event. A tornado is a violent, dangerous rotating column of air that is in contact with the surface of the Earth and a cumulonimbus cloud. Because of their appearance they are often call twisters.

#### Floods

Flood is an overflow of water that 'submerges' land. The EU Floods Directive defines a flood as a temporary covering by water of land which is usually not covered by water. In the sense of 'flowing water',

the word may also be applied to the inflow of the tides. Flooding may result from the volume of



water within a body of water, such as a river or lake, which overflows causing the result that some of the water escapes its usual boundaries. While the size of a lake or other body of water will vary with seasonal changes in precipitation and snow melt, it is not a significant flood unless the water covers land used by man like a village, city or other inhabited area, roads, expanses of farmland, etc.

### Droughts



Drought is the unusual dryness of soil caused by levels of rainfall significantly below average over a prolonged period. Hot dry winds, shortage of water, high temperatures and consequent evaporation of moisture from the ground can also contribute to conditions of drought. Droughts result in crop failure and shortages of water.

### Impact

#### Effects on Agriculture Sector

Pakistani Government Officials reported that the floods cause disastrous damage to the agricultural infrastructure. According to the reports of Food and Agriculture Organization (FAO) of the United Nations, flood waters inundated approximately 6.9 million hectares of crop land across Pakistan's most productive grounds in Punjab, Khyber Pakhtunkhwa and Sindh provinces. This is nearly 16 % of all

cultivable land in Pakistan. The country's primary crops are cotton, sugarcane, rice, tobacco, fruits, vegetables, pulses and animal fodder. Farming is the country's most chief source of food and also a primary economic bastion. Pakistan's Ministry of National Food Security and Research (MNFSR) reported that economic losses due to crop damage of rice was PKR21.3 billion, of sugarcane was PKR52 billion to over 80,000 hectares, PKR22.4 billion of maize, PKR17.3 billion of wheat stock after damaging over 667,000 tonnes and PKR45 billion to fruits, fodder and vegetables. Farmers distinguished that seed for next year's crop season was washed away.

Textile industry was also affected by floods. Over two million bales of cotton which is 20 % of the crop were washed away over 280,000 hectares uphill August 30<sup>th</sup>. The economic damages from the lost cotton was anticipated at PKR80 billion. 60% of the country's exports are accounted by Pakistan's textile industry. More than 200,000 livestock were died while the rest of the remaining livestock were facing a shortage of feed and fodder critical for survival. In Punjab Province alone, losses from the livestock casualties were PKR9.2 billion. There was a danger that 427,000 additional animals may be dying as a result of malnourishment and disease.

### Prevention/Mitigation Measures for Disasters

#### *Construction of farm ponds and rainwater harvesting:*

About 5 to 10% of the farmland must be used for digging farm ponds where rainwater is collected during heavy rainfall. The rainwater can be used for supplementary irrigation for crops suffering from drought at critical growth stages, saving the crops and stabilizing the productivity. We can also grow fish in the ponds. Pond water can also be used for raising some animals.

**Mulching:** in drought conditions the space between crops can be covered with a 2–3 inch layer of dry crop residues (natural mulch) to conserve soil moisture. Plastic mulch can be used to conserve moisture and to prevent weed growth.

**Mixed or Inter-Cropping:** Planting 2 or 3 crops in the same field at same time is an insurance against adverse weather. Even if one crop fails, other crops will produce some yields.

**Ridges and Furrow System of Farming:** Furrows drain the excess water into a pond or other structure and the water can be used for irrigation later.

**Raised Bed and Furrow System of Farming:** Crops on raised beds are less affected by flooding and the

furrows help drain the excess water quickly into a pond for later use.

**Deep Drains along Lower Edge of the Field:** This will help drain the excess water into a pond or into the soil.

**Wind Breaks:** Farmers should grow wind brakes where lot of winds is occur.

**Insurance:** Farmers should insure their crops from different insurance companies to recover loss after disasters. It is one of the best ways to protect farm income.

Farmers should keep up to date themselves about weather conditions and future weather prediction and make a strategy to protect their assets.

**Emergency Personal:** Progressive farmers should hire or invite emergency personnel to visit farm properties and assess major risks. This not only can help producers learn what areas could use improvement but also could help first responders understand how to handle a disaster on a specific farm.

**Grow Resistant Crops:** Farmers should plant such crops which possess resistance against disasters and extreme conditions like sunflower deep and extensive roots of make them good candidate for resisting extreme conditions. Alfalfa is also a good example due to its deep rooting. Those roots also help hold the soil against winds. And alfalfa can be a valuable food source for animals.

Source:

<http://www.earthtimes.org/encyclopaedia/environmental-issues/natural-disasters/>

## POST HARVEST LOSSES IN FRUITS AND VEGETABLES

### Introduction



The expression “post-harvest losses” means a measurable quantitative and qualitative loss in a given product. Post-harvest loss is the “degradation in both quantity and quality of a food product during the

chain of interconnected activities from the time of harvest to the delivery of food to the consumer. Food security, both in terms of availability and access to food, poses a challenge to rapidly growing populations, in environments of dwindling land and water resources.

### Importance of Post Harvest Handling

Fresh fruits and vegetables are highly perishable. Farmers take care of their produce from seedling to harvest and therefore expect good returns. Postharvest losses which average between 24 and 40% in developing countries, and between 2 and 20% in developed countries are a major source of waste. High levels of waste result in higher prices for fresh produce, and the farmer increasingly facing poverty.

Fresh produce after harvest can be considered as being in a live form, as it continues the process of respiration and transpiration until its reserves of food and water are exhausted. Physiological changes or the rate of deterioration of fresh produce is influenced by the temperature, composition of the air surrounding the produce, and the humidity of the environment. No matter how good the quality, if packaging, transportation and marketing are not properly taken care of; fresh produce will be damaged and will undergo rapid decay. The causes of losses in fresh produce vary widely.

### Status of Post Harvest Handling

Poor infrastructure for storage, processing and marketing in many countries of the region contributes to a high proportion of waste, which average between 10 and 40%. Major infrastructural limitations also continue to impose severe constraints to domestic distribution as well as to the export of horticultural produce. Considerable waste occurs owing to the fact that small farmers lack resources and are unable to market their produce and implement suitable postharvest handling practices. Spoilage of fresh produce is also accelerated by the hot and humid climate of the region. Postharvest management and processing of horticultural produce has assumed considerable significance in light of increasing demand for fruits and vegetables in the region.

It should be noted that the production of fruits and vegetables is of significance only when they reach the consumer in good condition and at a reasonable price. The concept of placing exclusive emphasis on increased production of fruits and vegetables is self-defeating. It is important to see how much of the

produce goes through marketing channels and finally reaches the consumer. Efforts should be made to integrate production with postharvest management since postharvest loss reduction and utilization have considerable bearing on food availability.

### Causes of Post Harvest Handling

Postharvest losses are caused by both external and internal factors.

#### External Factors Which Lead to Postharvest Losses

##### Mechanical Injury

Fresh fruits and vegetables are highly susceptible to mechanical injury owing to their tender texture and high moisture content. Poor handling, unsuitable packaging and improper packing during transportation are the cause of bruising, cutting, breaking, impact wounding, and other forms of injury in fresh fruits and vegetables.

##### Parasitic Diseases



The invasion of fruits and vegetables by fungi, bacteria, insects and other organisms, is a major cause of postharvest losses in fruits and vegetables. Microorganisms readily attack fresh produce and spread rapidly, owing to the lack of natural defense mechanisms in the tissues of fresh produce, and the abundance of nutrients and moisture which supports their growth. Control of postharvest decay is increasingly becoming a difficult task, since the number of pesticides available is rapidly declining as consumer concern for food safety is increasing.

#### Internal Factors

##### Physiological Deterioration

Fruit and vegetable tissues are still alive after harvest, and continue their physiological activity. Physiological disorders occur as a result of mineral deficiency, low or high temperature injury, or



undesirable environmental conditions, such as high humidity.

#### Post Harvest Losses in Pakistan

In Pakistan, the magnitude of post-harvest losses of vegetables and fruits is about 35 per cent. Efforts are being made both at federal and provincial level to minimize these losses to safe guard the interest of growers, processors, traders, retailers and consumers.

During peak harvest periods there is an abundance of fruits and vegetables in the growing areas. Postharvest handling, grading, packing, transportation and storage techniques/facilities are inadequate and with the exception of apricot dehydration, relatively limited processing is carried out. Levels of postharvest losses in fruits owing to improper harvesting, handling, grading, packing, transportation and storage are summarized in Table below.

	Fruits	Production (000 Kg)	Wastage (000 Kg)	Losses (%)
1.	Almonds	1,983	121	6.10
2.	Apple	15,449	4,169	26.99
3.	Apricot	107,737	48,626	45.13
4.	Cherry	1,862	1,165	62.57
5.	Grapes	7,178	1,510	21.04
6.	Mulberry	16,556	8,398	50.72
7.	Peaches	4,447	1,346	30.27
8.	Pear	4,128	633	15.33
9.	Plum	710	243	34.23
10.	Pomegranate	2,221	692	31.16
11.	Walnut	6,552	439	6.70
12.	Other Fruits	617	160	25.93

Source: Study on Crop Production and Marketing in Northern Areas Development of Agriculture, Northern Areas

#### Scope and Strategies

The unnecessary waste of valuable commodities can be checked by processing into value added products.

Considerable scope exists for both domestic and export trade in fruits and vegetables. This will, however, only be achieved with improved distribution systems and processing of these highly perishable horticultural commodities. The even marketing of fruits from areas of abundance to places of scarcity will stabilize fruit and vegetable prices. Proper postharvest management practices for minimizing losses and for improving marketing are generally not followed in the country.

### Packing Stations

Fruits and vegetables are generally packed in the field without any pretreatment. Some are even transported without any packaging. In developed countries on the other hand, fruits and vegetables are generally selected, cut, placed in bulk containers and transported to packing stations where they are trimmed, sorted, graded, packed in cartons or crates and cooled. They are temporarily placed in cool storage for subsequent loading or are loaded directly onto refrigerated vehicles, and transported to market. Due to the lack of proper packaging systems, large volumes of the inedible portions of vegetables such as cauliflower, peas etc. are transported to wholesale markets from the field. They are discarded to various degrees and large quantities of biomass which could be used as value added products are wasted. Removal of these inedible vegetable portions prior to marketing would reduce both transportation costs and environmental pollution. These inedible vegetable parts ultimately undergo decomposition, cause sanitation problems and produce gases which are detrimental to the environment

### Packaging

Packaging is an integral element in the marketing of fresh horticultural produce. It provides an essential link between the producer and the consumer. Owing to its favorable properties, wood has remained the main packaging material for fruits and vegetables. Timber conservation is, however, critical in order to maintain an ecological balance, and there is an urgency to identify substitutes for the use of timber in an effort to protect forest resources in many developing countries. Packaging has been identified as one of the most



important areas where substitution of wood is not only possible but also obviously desirable. Considerable work has been done by different agencies in introducing alternative types of packaging. Corrugated fibre board (CFB) containers consume one third of the wood required for producing timber boxes of the same size.

### Palletization



Loading and unloading are very important steps in the postharvest handling of fruits and vegetables but are often neglected. The individual handling of packaged produce leads to mishandling and to high postharvest losses. With the introduction of CFB boxes, serious consideration should be given to the introduction of palletization and mechanical loading and unloading of produce particularly with the use of fork-lift trucks, in order to minimize produce mishandling.

### Cold/Cool Chain

The maintenance of low temperatures at different stages of handling helps in reducing losses and in retaining the quality of fruits and vegetable. High cost and the lack of abundant uninterrupted power supplies, make it impossible to develop cold chain systems. Consideration should, however, be given to the development of alternative cooling systems based on evaporative cooling techniques. Systems of this type would at least reduce postharvest deterioration and extend the shelf life of fresh fruits and vegetables.

### Public Awareness

Public awareness campaigns must be implemented in order to increase awareness of the costs and implication of losses after harvest/production. Public awareness campaigns should involve scientists, as well as extension and social worker organizations, and should incorporate the use of audio visual aids and the mass communication systems, including both print and electronic media.

## زرعی سفارشات برائے کسان

### کپاس

- ﴿ کپاس کے کاشتکاروں کی مفت رہنمائی کے لیے سنٹرل ریسرچ اسٹیوٹ پرانا شجاع آباد روڈ ملتان میں کائٹن کلیننگ کا آغاز کر دیا گیا ہے۔
- ﴿ بہتر پیداوار کے لیے 2 سے 3 بوری یوریا فی ایکڑ تین برابر قسطوں میں استعمال کریں۔ پہلی بوری ڈو دیاں بننے پر، دوسری پھول آنے پر اور تیسری ٹینڈے بننے پر ڈالیں۔
- ﴿ کھیتوں میں ارد گرد پائی جانے والی جڑی بوٹیوں کی تلفی جاری رکھیں۔ کیونکہ یہ سفید مکھی، ہلی بگ، لشکری سنڈی اور لیف کرل وائرس کے حملہ کا باعث بنتی ہیں۔
- ﴿ اگر کپاس پر پتہ لپیٹ وائرس کا حملہ ہو جائے تو دل برداشتہ ہونے کی بجائے کپاس کی دیکھ بھال پر زیادہ توجہ دیں اس سلسلہ میں آبپاشی کا خاص خیال رکھیں تاکہ بیماری کے مضر اثرات کم ہوں اور بہتر پیداوار حاصل ہو سکے۔
- ﴿ سپرے کرنے کے لیے کیمیکل دوائی کے ساتھ ٹیوب ویل والا پانی استعمال کریں۔

### کماڈ

- ﴿ ان دنوں کماڈ کا قد بڑھ رہا ہوتا ہے۔ چنانچہ موسمی حالات کو مد نظر رکھتے ہوئے آبپاشی جاری رکھیں۔ عمومی طور پر جولائی اور اگست کے مہینوں میں 15 دن کے وقفوں سے آبپاشی کرنی چاہیے۔
- ﴿ گنے کی ستمبر کاشت کے لیے مناسب منسوبہ بندی کریں تاکہ اس کی کاشت بروقت کی جاسکے۔ عام طور پر ستمبر کاشت فصل اگلے سال اکتوبر میں کٹائی کے لیے تیار ہو جاتی ہے۔

### جنتر

- ﴿ یہ ایک پھلی دار فصل ہے جو زمین کی زرخیزی بڑھانے کے لیے بطور سبز کاشت کی جاتی ہے تاہم پنجاب کے بعض علاقوں میں اسے چارہ کے لیے بھی کاشت کیا جاتا ہے۔ خصوصاً یہ چھوٹے جانوروں کی من پسند غذا ہے۔
- ﴿ یہ فصل وسط اگست کے آخر تک کاشت کی جاتی ہے۔ البتہ مون سون کی بارشوں کے دوران اس کی بڑھوتری بہت اچھی ہوتی ہے۔
- ﴿ سبز کھاد کے لیے کاشت کی جانے والی فصل کے لیے 20 تا 25 کلوگرام جبکہ بیج والی فصل کے لیے 10 تا 12 کلوگرام بیج فی ایکڑ استعمال کریں۔
- ﴿ بہتر پیداوار کے لیے ایک بوری ڈی اے پی فی ایکڑ بوقت کاشت ڈالیں۔
- ﴿ پہلا پانی بوائی کے 18 تا 22 دن بعد لگائیں۔ سبز کھاد کے لیے کاشت کے بعد 40 سے 50 دن بعد پھول آنے سے قبل اسے روٹاویٹر سے کتر کر زمین میں دبا دیں۔

### موسی مکی

- ﴿ موسی مکی کی کاشت کے لیے زمین کی تیاری میں 1 مرتبہ چزل یا راجہ ہل چلا کر 3 تا 4 مرتبہ عام ہل چلائیں اور سہاگہ دیں تاکہ اچھی طرح مٹی نرم، ہموار اور بھری بھری ہو جائے
- ﴿ بیج بذریعہ ڈرل یا ٹوں پر قطاروں میں کاشت کریں۔ قطاروں کا درمیانی فاصلہ 2.25 سے 2.5 فٹ رکھیں جبکہ پودوں کا درمیانی فاصلہ قسم کے مطابق 7 تا 8 انچ رکھیں تاکہ پودوں کی فی ایکڑ تعداد 28 ہزار سے 30 حاصل ہو سکے۔
- ﴿ ڈرل کاشت کی صورت میں شرح بیج 12 سے 15 کلوگرام جبکہ وٹوں پر کاشت کی صورت میں 8 سے 10 کلوگرام فی ایکڑ رکھیں۔
- ﴿ کھادوں کا استعمال تجزیہ زمین کی بنیاد پر کریں بصورت دیگر درمیانی زرخیز زمینوں میں ہائبرڈ اقسام کے لیے 2.5 بوری سونا ڈی اے پی 1.5 بوری ایف ایف سی ایس او پی 1.25 بوری ایف ایف سی ایم او پی فی ایکڑ بوائی کے وقت استعمال کریں۔ سونا پور یا بحساب 4 بوری فی ایکڑ تین برابر قسطوں میں فصل کاقد 1 فٹ سے 3 فٹ اور پھول بننے کے مراحل پر ڈالیں۔
- ﴿ مکی کی اچھی پیداوار کے لیے کم از کم 10 تا 12 پانی لگائیں۔ رتیلی زمینوں آبپاشی کا وقفہ 7 تا 10 دن جبکہ بھاری زمینوں میں 10 تا 15 دن رکھیں۔

**MANAGEMENT TIPS**

**Collaboration Makes Companies More Efficient**



Collaborative leadership is important to reducing organizational waste, write Ron Ricci and Carl Wiese. A culture of collaboration helps to ensure that individual managers don't hoard resources, helping the company as a whole to operate more efficiently. "By unlocking these trapped resources, organizations can more quickly and successfully pursue emerging market opportunities," Ricci and Wiese write

*Source: Smart Brief on Leadership*

**Achieving Goals to Motivate People**

Pursuing pure "motivation" isn't necessarily the best way to achieve team success. Results tend to increase a team's motivation, so achieving goals can be the most effective way to motivate people. ManageBetter.biz enumerates these factors to get your team going: clear rules, fundamental skills, disciplined action, passion, collaboration and self sacrifice, and resilience.



**Show Appreciation in the Workplace**

You can show appreciation every day when dealing with people. You can tell your colleagues, coworkers and employees how much you value them and their contribution any day of the year. Trust me. No occasion is necessary. In fact, small surprises and tokens of your appreciation spread throughout the

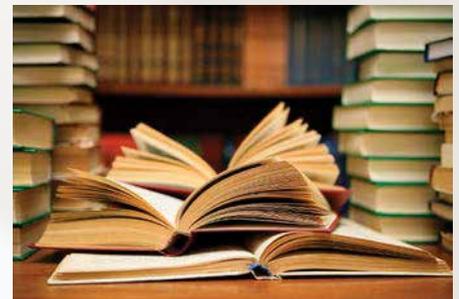


year help the people in your work life feel valued all year long. Demonstrating appreciation in dealing with your everyday people is a powerful way to interact with and demonstrate your care.

*Source: [https:// www.thebalance.com](https://www.thebalance.com)*

**Simple Ways to Read (a Lot) More Books**

Books give us new knowledge and broaden our understanding of the world. But how can you fit reading into your already hectic schedule? Start



by publicly committing to reading more. Research shows that telling others you're going to do something makes you more likely to follow through. So open a Good reads or Reco account, and update your profile every time you finish a book. Don't make yourself slog through a book if you aren't getting something out of it. Think of quitting a book as a way to make room for that gem you're going to read next. Most important, keep a book with you at all times. Instead of checking Face book when you're standing in the grocery line or waiting for the movie to start, read a few pages here and there. They'll add up.

**Help other employees find their Greatness**

Every employee in your organization has talents, skills, and experience. If you can help fellow employees harness their best abilities, you benefit the organization immeasurably. The growth of individual employees benefits the whole. Compliment, recognize, praise, and notice their contributions. You don't have to be a manager to help create a positive, motivating environment for employees. In this environment, employees do find and contribute their greatness. They will always remember that you were part of bringing it out of them. Those interpersonal work relationships are cherished.

*Source: Management Tip of the Day,Harvard Business Review*

## NATIONAL NEWS

### Urea Off-Take Slow and Steady

The federal budget 2017-18 went a long way to address ambiguities amongst the farmers' community, especially in terms of fertilizer pricing.



Channel checks suggest that urea off-take has picked up considerably in the last two months, as Dar had announced maintaining urea prices at the current

Farm economy numbers are hard to get hold of, but delay in Kharif sowing may hamper the season's off-take. The DAP off-take too has not picked up by as much as it was anticipated, but the trend is nonetheless encouraging, as the NP application ratio is continuously on the mend. Expect urea off-take to increase at a faster rate in the dying months of the year. Partly, because the government has announced continuation of the subsidy. Moreover, the clearance of excess stockpile sitting with the NFML has to be cleared at high concessional rates, which should spur demand, and may also compel other players to lower prices.

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### A Tough Month for Rice Exports

Rice exports continue their decline vis-à-vis the mounting trade deficit. For the eleven months ended FY17, Pakistan's total rice exports are down by 17 percent year-on-year in terms of quantity, and 15 percent in terms of dollars earned.

May 2017 was a particularly difficult month for exporters in general, as the ten-day transporters' strike did a lot of damage. The Rice Exporters' Association of Pakistan (REAP) even threatened to shut down their mills in response to the strike, as export consignments were delayed and orders were canceled. In May, the total quantity of rice exported was 41 percent less than April.

*Copyright Business Recorder, 2017*

### Sugar Update

Sugar exports for the month of May exceeded 112,000 MT; bringing the total exported volume from January-May to just over 300,000 MT. Sugar production in the country is currently at historically high and unprecedented levels. Last month, the surplus stock was reported at over 1.8 million MT. To

put that number in perspective, consider that Pakistan's annual consumption is 5.1 million MT only. With the increasing shift from cotton towards sugarcane, even higher production is anticipated in the coming year and so the existing surplus must be gotten rid of.

The Pakistan Sugar Mills Association (PSMA) has hence been pressing for yet another extension on sugar exports from the ECC. On June 07, the extension was granted to export until July 31 with no change in quota. The inability to meet the export target has been due to issues at the Afghan border, Afghanistan being our only major market for sugar exports.

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### Soybeans and Poultry

All oilseeds were subject to import duty GST – sunflower, canola, and soybean all had a 176 percent duty sales tax on them. However, the duty GST on soybean was



brought down to six percent. Meanwhile, the import duty on soybean meal was increased from five percent to ten percent (in addition to 10 percent sales tax). This hurt the poultry sector; 15-20 percent of Pakistan's poultry industry relies on soybean meal as feed. In addition, import permits from India were canceled by the Ministry of National Food Security & Research over allegations of the imported meal being 'haram.' So, soymeal became expensive to import and the local solvent extractors could charge the higher rate for it.

It must be noted that soybeans are not grown locally. Soybean was first introduced as an oilseed crop in Pakistan in the 1960s but could not flourish. Currently, the area under soybean cultivation is negligible and it has no role in edible oil and soymeal production.

The strong demand for unprocessed soybean imports has been created by higher import duties on processed soymeal. And while this column maintains that locally produced items are better than imports, bear in mind that the beans are being imported in the first place – and that too, after taxing soymeal through the nose. Essentially, the industrial process (of crushing soybeans to produce oil and meal) is what is being promoted here.

*Copyright Business Recorder, 2017*

**ZTBL NEWS**

**Belarusian Delegation Visited ZTBL**

Belarusian delegation comprising of H.E. Mr. Vitaly Vovk-Minister of Industry of the Republic of Belarus, Co-Chairman of the Joint Belarus-



Pakistan Commission on Trade & Economic Cooperation and H.E. Mr. Vladimir Papsuev Counselor/In charge of Affairs of the Belarus Embassy in

Pakistan visited ZTBL Head Office Islamabad on 13th July, 2017. The delegation was welcomed by



honorable President ZTBL, Syed Talat Mahmood. Chief Operating Officer Mian Aamir Hussain and EVP (PR&TD) Mr. Farhat Karim Hashmi briefed the delegation about role of ZTBL in introducing agri machinery in agriculture sector of Pakistan and credit lending to farming community. Belarusian Minister presented Souvenir to the President, ZTBL and President ZTBL also presented a souvenir to Belarusian Minister.

**Launch of Go Green Campaign**

Liability Marketing Division has initiated a marketing campaign named "Go Green".

The main focus of the scheme is to increase sustainable CASA deposit through branches.



In order to keep spirit high and to incline the employees towards the augmentation of New to Bank (NTB/CASA), policy of award honorarium has been framed though which employees of the bank would be awarded twice a year for having referrals of minimum 50 NTB/CASA with average balance of 25000 per month.

**A Field Day Cum Demonstration of Dairy Machinery at ZTBL Farm**

PR&TD organized a Field Day Cum Demonstration of Dairy Machinery such as Fodder Cutter Cum Chopper, Silage Baler, Bail Wrapping Machine and Powered Inter Row Rotary Cultivating Machine on 7th July, 2017 at ZTBL Farm, Islamabad . It was attended by Executives of the Bank from Head Office & ZTBL Staff College, Agri. Machinery Traders, Subject Specialists from Farmers Training Department and Agriculture Technology Department, In Services Trainees from the Field and Researches/ Scientists from National Agriculture Research Council (NARC), Islamabad.



Mr. Farhat Karim Hashmi, EVP (PR&TD) and Muhammad Ikram Ul Haq, SVP (ATD) apprised the participants about the primary objectives and benefits of Silage to animals. Dr. Muhammad Afzal, PSO, Livestock Research, NARC disseminated the technical knowledge about Silage and its features to the participants.

**Retirement Ceremony of Employees 2017**

In order to recognize and appreciate services of Bank employees who retired during 2017, a retirement ceremony was conducted at ZTBL Head office.



**Editorial Board**

- Mr. Farhat Karim Hashmi, EVP (PR & TD)
- Mr. Muhammad Rashid, SVP (P & RD)
- Miss. Abida Razaq, VP (P&RD)
- Mr. Hammad Qadeer Khan, AVP (P&RD)
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**Technology for Agriculture**